

FREQUENCY SYNTHESIZER USING DIGITAL
PRE-DISTORTION AND METHOD

ABSTRACT OF THE DISCLOSURE

5 A method includes identifying a setting for a capacitor bank associated with a voltage-controlled oscillator in a closed-loop phase-locked-loop. The setting represents a combination of one
10 or more capacitors in the capacitor bank. The method also includes estimating a gain introduced by the closed-loop phase-locked-loop when the oscillator operates using the identified setting. The method further includes estimating a response of a
15 loop filter in the phase-locked-loop and identifying one or more coefficients for a digital filter using the identified gain and the identified loop filter response. The digital filter is operable to filter an input signal. In addition, the method includes modulating the filtered input signal using the phase-locked-loop to produce an output signal.